APPLYING COMPLEXITY THEORY TO SOLVE HOSPITALITY CONTRARIAN CASE CONUNDRUMS: ILLUMINATING HAPPY-LOW AND UNHAPPY-HIGH PERFORMING FRONTLINE SERVICE EMPLOYEES

James Po-Hsun Hsiao, National Taiwan University of Physical Education and Sport
Chyi Jaw, National Yunlin University of Science and Technology
Tzung-Cheng (T.C.) Huan (corresponding author), National Chiayi University
Arch G. Woodside, Boston College

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Abstract

Purpose – This study advances a configural asymmetric theory of the complex antecedents to hospitality employee happiness-at-work and managers' assessments of employees' quality of work-performance. The study transcends variable and case-level analyses to go beyond prior statistical findings of small-to-medium effect sizes of happiness-performance relationships; the study here identifies antecedent paths involving high-versus-low happy employees associating with high-versus-low managers' assessments of these employees' performances.

Design/methodology/approach – The study merges data from surveys of employees (n=247) and surveys completed by their managers (n=43) and by using qualitative comparative analysis via the software program, fsQCA.com. The study analyzes data from Janfusan Fancyworld, the largest (in revenues and number of employees) tourism business group in Taiwan; Janfusan Fancyworld includes tourist hotels, amusement parks, restaurants and additional firms in related service sectors.

Findings – The findings support the four tenets of configural analysis and theory construction: recognize equifinality of different solutions for the same outcome; test for asymmetric solutions; test for causal asymmetric outcomes for very high versus very low happiness and work performance; and embrace complexity.

Research limitations/implications – Additional research in other firms and additional countries is necessary to confirm the usefulness of examining algorithms for predicting very high (low) happiness and very high (low) quality of work performance. The implications are substantial that configural theory and research will resolve perplexing happiness-performance conundrums.

Practical implications – The study provides useful case-level algorithms involving employees' demographic characteristics and their assessments of work facet-specifics which are useful for explaining very high happiness-at-work and high quality-of-work performance (as assessed by managers)—as well as algorithms explaining very low happiness and very low quality-of-work performance.

Originality/value – The study is the first to propose and test the tenets of configural theory in the context of hospitality front-line service employees' happiness-at-work and managers' assessments of these employees quality of work performances.

Keywords – configuration; customer-directed extra role performance; demographics; employee happiness-at-work; in-role performance; work facet-specifics

1. Introduction

Warr (2007) and Fisher (2010) emphasize three principal domains of happiness: context-free or a person's chronic state of happiness (see Hellen & Sääksjärvi, 2011); domain-specific happiness covering only feelings in a targeted domain (e.g., happiness at home with family members, happiness at work), and facet-specific happiness focusing on particular aspects of a domain, such as your pay, physical surroundings at work, or your boss. "Many publications appear to be based on the assumption that causes and consequences are the same at each level of scope. They are not, and must be distinguished from each other" (Warr, 2007, p. 726). The study here focuses on the relationships of the demographic influences on service-facet happiness, overall happiness, and on-the-job performances, and the second and third domains of happiness—how they relate to each other among hospitality front-line service employees (HFSE) as well as work-domain and work facet-specific happiness associations with managers' assessments of HFSE's work performances. Research on the antecedents to context-free, chronic states of happiness and their outcomes-in-life are available (e.g., Lee & Choi, 2014; Veenhoven, 1994), but such data are rarely collected or available in specific job settings or in assessments in general, and we did not consider pursuing this issue to be worth less than the study of context-specific happiness; also, the data collection time-period allotted for collecting service-facet happiness dimensions is limited to a few minutes by both senior managers and by the managers' and employees' willingness to

cooperate in completing the survey instruments. The study of the impacts of context-free chronic states of (un)happiness on service-facet and overall job happiness is worth considering for future research.

The present study includes employees judging their own happiness with facets of their work as well as their overall job happiness and managers' assessments of these same employees' job performances—not employees' self-reports on their job performances. The study advances theory for solving the major research happiness-performance conundrums. The conundrums include estimates indicating a small-to-medium effect size (Cohen, 1988, 1992) of the relationship between employee work-domain happiness and managers' assessment of employee work-performance. Some studies indicate no significant relationship as well as a number of cases of employees very low in work-domain happiness with very high performance assessments and employees with high work-domain happiness with very low performance assessments. The theory and empirical findings in this report serve to increase understanding and explanation of the contexts in which the positive effect sizes for happiness-performance associations are small versus large as well as the contexts in which work-domain happiness and work performance associate negatively.

This study includes an empirical test of the theory via the collection and merging of two data files—HFSEs' facets-specific and work-domain happiness and their managers' assessments of HFSEs' work in-role performance (IRP) and their customer-directed

extra-role performance (CDERP). Bettencourt, Bettencourt, and Brown (1997), Gwinner and Meuter (2001), and Karatepe (2013) suggest that CDERP is the extra effort of employees when providing service to customers that raises the quality and positive perception of the service given. While the relationship between IRP and CDERP is positive and the effect size is large for this relationship, hospitality managers in the present study emphasized the need to assess both—and managers and employees were able to distinguish between IRP and CDERP as overlapping but unique domains.

The following two perspectives guide theory advancement and the analysis of survey data in the present study. “Scientists' tools are not neutral” (Gigerenzer, 1991, p. 19). “Relationships between variables can be non-linear with abrupt switches occurring, so the same “cause” can, in specific circumstances, produce different effects,” (“The Complexity Turn,” Urry, 2005, p. 4). For hospitality research, Gigerenzer’s (1991) perspective stresses the point that method, including the tools used to analyze data (e.g., symmetric analysis such as MRA—multiple regression analysis), influences the researcher’s theoretical stance; the present study advances the view that the symmetric stance to data analysis and theory development has severe limitations; these limitations can be overcome by embracing an asymmetric stance to hospitality method-theory conjunctions. Urry’s (2005) perspective both extends and complements Gigerenzer’s (1991) wisdom. Here is a major take-away from Urry’s complexity turn: the same antecedent condition (i.e., “independent variable” in MRA)

has both a positive and negative relationship with an outcome condition (i.e., "dependent variable" in MRA)—which depends on the particular complex configuration of antecedents under examination.

Taking a complexity turn to theory-method includes recognizing that data sets of reasonable sizes ($n > 100$) include contrarian cases and that advancing theory needs to include explanations and descriptions of such cases. "Contrarian cases" are individuals (e.g., respondents, firms, or nations) having an antecedent condition with a negative (positive) association with an outcome condition while the majority of other cases show a positive (negative) antecedent-outcome main-effect relationship. Most studies using symmetric tests (e.g., MRA) fail to recognize or account for contrarian cases; most of the MRA studies also present only over-identified estimation models (models that usually include more than five independent terms with some of the terms being not statistically significant), and fail to report tests for predictive validity of these estimation models (e.g., Lee & Choi, 2014; Wiese & Freund, 2005). Bass, Tigert, and Lonsdale (1968), Armstrong (2012), McClelland (1998), and Gigerenzer and Brighton (2009) describe the inherent problems in crafting and examining theory using symmetric tests. In a review of the employee well-being (including happiness) and performance literature, Van de Voorde, Paauwe, and Van Veldhoven (2012) identify only one (i.e., Orlitzky and Frenkel, 2005) of 36 studies that examines mutual gains and conflicting outcomes perspectives simultaneously. "Although their study confirmed the

'positive' and 'negative' consequences of HRM on the three employee well-being types in separate analyses, no integrated model was tested [by Orlitzky & Frenkel (2005)]," (Van de Voorde et al. 2012). In an extensive review of the literature, Fisher (2009, p. 401) concludes, "In sum, the evidence suggests that happiness at work does matter, not just to employees but also to organizations." However, Fisher (2009) fails to explore the perspective that high unhappiness-at-work can relate positively to high performance in some contexts. The present study does explore this contrarian perspective and offers evidence on the contexts of such occurrences.

Following this introduction, section two provides a brief review of relevant literature on employee work-domain happiness and managers' performance assessments. Section three introduces a configural theory of alternative antecedent recipes associating with high employee work-domain happiness, IRP, and CDERP. Section four describes the method of the empirical study to test the theory. Section five presents the findings of the study. Section six is a discussion of the findings, includes limitations of the empirical study, and concludes with implications to theory and practice and suggestions for future research.

2. Employee Work-Domain Happiness and Managers' Assessment of Employee Performance

Lyubomirsky, King, and Diener (2005) provide an extensive meta-analysis of general and specific categories of happiness and success. Their overall assessments of work-life

happiness and success indicate a small-to medium effect size (a weighted mean r = .20 for 19 cross-sectional studies and a weighted r = .05 for 11 longitudinal studies).

The Lyubomirsky, King, and Diener (2005) meta-analysis summarizes findings across all three levels of happiness and various domains of work-related success. Drilling down to the relationship between work-related happiness and managers' assessments of employee work performance indicates a small effect size. Work performance may be more accurately predicted by general well-being than by job satisfaction. "In two studies, Wright and Cropanzano (2000) report that job performance, as judged by supervisors, was significantly correlated with well-being (r's of .32 and .34, respectively), but uncorrelated with measures of job satisfaction (r's of -.08 and .08, respectively)" (Lyubomirsky, King, & Diener, 2005, p. 822). Adopting the perspective that "job satisfaction" and "employee-at-work happiness" are analogous concepts, the Lyubomirsky, King, and Diener (2005) general conclusion of a "robust" positive relationship between happiness and success ("robust" appears eight times in their meta-analysis) fails to hold for the nitty-gritty findings for employee work-happiness and managers' assessment of employee work performance.

Additional reviews (Iaffaldano & Muchinsky, 1985; Judge et al., 2001; Vroom, 1964) confirm that the uncorrected relationship between job satisfaction and performance is modest. However, Fisher (2010) emphasizes that when corrections for unreliability and sampling

error are applied, meta-analytic studies show moderate relationships between job satisfaction and both core and contextual performance (Judge, et al., 2001; LePine et al., 2002).

Rather than continuing to examine the issue of how large is the effect size between employee job happiness and managers' evaluations of employee job performance, the study here proposes redirecting focus on examining the complex antecedent conditions associating with very high and low happiness-at-work as an outcome as well as the configural conditions that include very high (low) happiness and manager's assessments of very high (low) job performance as an outcome condition.

3. Configurational Theory of Antecedents and Outcomes of Employee Happiness-at-Work and Manager's Assessment of Job Performance

Heretofore happiness-success research and modeling makes use almost exclusively of symmetric tests of statistical hypotheses—tests such as analysis of variance (ANOVA), multiple regression analysis (MRA), and structural equation modeling (SEM). Such statistical tools implicitly assume and test symmetrical theory, that is, a high value in an independent variable (i.e., X, one construct or an equation containing several constructs) relates closely with a high value in a dependent variable (Y) and low value in the same independent variable relates closely with a low value in the same dependent variable. The symmetric perspective builds from the assumption of sufficiency and necessity of the relationship between X and Y—for Y to be high, X must be high; for Y to be low, X must be low.

3a. General Configural Theory

Most real-life contexts include asymmetrical relationships quite often and only rarely symmetrical ones (Ragin, 2008). Panel B in Figure 1 illustrates the symmetrical stance. Panels C and D illustrate two symmetrical stances. Panel C illustrates the sufficiency but not necessary relationship. Panel D illustrates the necessary but not sufficiency stance. (Panel A shows a rectangular distribution of cases, that is, no relationship other than a random distribution of Y's for X's.)

Figure 1 here.

The insight, "Scientists' tools are not neutral" (Gigerenzer, 1991, p. 19) and the limitations of examining theoretical relationships empirically using symmetric statistical tests have lead researchers in marketing (Bass, Tigert, & Lonsdale, 1968), in psychology (Doyle, O'Connor, Reynolds, & Bottomley, 1999; McClelland, 1998), in sociology (Ragin, 2008), in management (Fiss, 2007, 2011), and in tourism (Woodside, Hsu, & Marshall, 2011) to call for building and testing theory using algorithms from an asymmetric stance. For example, in building models which predict success at work McClelland (1998) advocates focusing theory and tests on "competency-qualification algorithms" following the identification of "critical frequencies" (i.e., tipping points, see Gladwell, 1996) or levels that best distinguish between "outstanding" and "typical" executives.

Because data are noisy (i.e., construct values near the median for an independent variable associate frequently with a wide range of values for a dependent variable), quite often individual (case-level) memberships within level 5 (highest) versus level 1 (lowest) among quintiles are representative of critical frequencies (i.e., "tipping points"). For example, while the correlation for the total set of data in the current study employee happiness-at-work and job performance equals .17 ($p < .009$, a small-to-medium effect size, $n = 243$), a comparison of distributions of the critical frequencies within quintiles 1 and 5 for low/high happiness and low/high performance results in a large effect size ($\varphi = .48$, $p < .003$, $n = 38$).

Both in theory and in real-life contexts, researchers and executives seek in particular to build algorithms accurate in identifying exceptional employee outcomes (e.g., algorithms that identify individuals either very high or very low in happiness and/or job performance). McClelland (1998) emphasizes that examining and reporting antecedents for high versus typical employee performance in terms of symmetrical tests (e.g., ANOVA, correlation, MRA, SEM) understates and misrepresents the significance of the focal relationship while configural statements based on tipping-points provide highly useful "competency algorithms." For a classification of "outstanding" versus "typical" performer, the competency algorithm McClelland (1998, p. 334) reports requires a case (i.e., individual executive) to achieve "for at least 1 of the 3 individual-initiative competencies, 1 of the organizational competencies, and 6 of the 12 valid competencies overall."

Ragin (2010) advances theory and provides useful software (fsQCA.com) for model-building and empirical-testing alternative algorithms that identify cases with high (or low) focal outcomes consistently. An algorithm is a conjunctive statement that requires the presence of two-or-more conditions in a given case for a favorable (unfavorable) conclusion or decision. For example, the following algorithm predicts high performer and is a complex antecedent condition (a recipe) that combines four simple antecedent conditions: a front-line employee who is happy-at-work, works well with other employees, never causes peer conflicts, and always arrives to work on-time is a high performer. This configural statement does not tell us that exhibiting this recipe is the only recipe that results in the identification of a high performer; the statement says only that an employee high in all four ingredients is a high performer. The statement indicates sufficiency but not necessity.

Configurational analysis stresses four tenets in study of antecedent conditions affecting an outcome. This article probes the four "tenets" rather than tests "hypotheses" to distinguish testing the strength of relationships using asymmetric Boolean algebra-based index metrics rather than symmetric matrix-based index metrics (e.g., Pearson correlations). The first tenet is the tenet of equifinality, that is, "a system can reach the same final state, from different initial conditions and by a variety of different paths" (Katz & Kahn, 1978, p. 30). While "unifinality" assumes the occurrence of one optimal configuration, equifinality assumes that two or more configurations can be equally effective in achieving high

performance within the same context (Fiss, 2007; Galunic & Eisenhardt, 1994; Gresov & Drazin, 1997). Thus, two front-line employees may be both very happy-at-work but for different combinations of antecedents.

The tenet of asymmetry (asymmetrical relationships) is the second tenet of configural analysis. Statistical tests such as multiple regression, structural equation modeling, and analysis of variance test for the presence of symmetrical relationships. However, large effect sizes (e.g., correlations above .60) rarely occur and usually occur only for tests for reliability (e.g., coefficient alpha). Real-life is most often made up of asymmetric relationships between simple and complex X scores and Y scores as appearing in panels c and d in Figure 1.

The tenet of complexity is the third tenet of configural analysis. Emergence is a central idea to the tenet of complexity: It is not that the sum is greater than the size of its parts—but that there are system effects that are different from their parts (Jervis, 1997; Urry, 2005). The complexity tenet supports a shift from reductionist analyses to those that involve the study of complex adaptive ("vital") matter that shows ordering but which remains on "the edge of chaos" (Urry, 2005, p. 1). Thus, the configural analysis focus is a shift away from examining/ deconstructing the net effect of each independent variable, interactions, moderating, mediator, and total effects to the study of alternative causal configurations or recipes that consistently result in a given outcome of interest (cf. Ragin, 1997)—such as high

employee happiness or employee work performance. Ragin (1997) refers to this paradigm shift as “turning the tables: how case-oriented methods challenge variable oriented methods.”

The butterfly effect is relevant for the study of operations of the complexity tenet—if combined in certain configurations with other antecedents, the flapping of a butterfly wings in a nearby location contributes to a huge impact in a distant location (see Lorenz, 1961). Consequently, the relevant issue is not to focus on the net effect of each independent variable but on the totality of testing each complex combination of antecedent conditions.

The tenet of complexity goes beyond the butterfly effect to include reversals of what variable-based research describes as “main effects.” Reversals of influence of a simple antecedent condition on an outcome condition can occur depending upon the other ingredients in alternative configurations. Thus, high happiness may occur in 6 of the 9, and low happiness may occur in 2 of the 9, complex configurations associating with high performance—a statement that illustrates that high happiness is not a necessity for high performance among all employees. In this brief thought experiment, the state of employee happiness is irrelevant in 1 of the 9 configurations. All 9 configurations are relevant to one or more employees with high happiness-at-work uniquely or in overlapping relationships; the 9 configurations may “explain” most but not all cases of high happiness among a sample of employees.

Fourth, configural theory also stresses the tenet of causal asymmetry, that is, the causes leading to the presence of an outcome of interest may be quite different from those leading to the absence of the outcome (Ragin, 2008). The use of "cause" here refers to relevant association and not causation from the perspective of true experiments with treatment and control groups and random assignment of cases to groups. A highly negative score for one minus happiness-at-work is an indicator (but not necessarily the same concept) of high unhappiness. The tenet of causal asymmetry suggests that high unhappiness is not an ingredient necessarily in all configurations that lead to low performance even if high happiness appears in nearly all algorithms associating with high performance.

3b. Happiness-Performance Configural Theory

Figure 2 is a visual summary of a configural theory of complex antecedent conditions leading to high as well as low happiness and high as well as low employee work performances (IRP and CDERP). The Venn diagrams in Figure 2 suggest the adoption of the perspective of configural influence on outcome conditions. The arrows in Figure 2 illustrate testable propositions of seven principal associations: (1) demographic configurations influence on facet-specific domains of work; (2) demographic configurations influence on happiness-at-work; (3) demographic configurations influence on employee IRP; (4) configurations of facet-specific domains-of-work influence on happiness; (5a) configurations

of facet-specific domains-of-work influence IRP; (5b) happiness affects 5a; (6) happiness as a stand-alone antecedent influences IRP; and (7) IRP's stand-alone influences CDERP.

Figure 2 here.

3c. Relevancy of Demographics to Happiness-at-Work

The literature on the net effects of employee demographic variables on work performance is vast and summaries are available (e.g., Kossek & Ozeki, 1998; Sloan, 2012; Warr, 2007). Kossek and Ozeki's (1998) meta-analytic (using effect sizes of correlations) findings show that regardless of the type of measure used (bidirectional work-family conflict, work-to-family, family-to-work); a consistent negative relationship exists among all forms of work-family conflict and job and/or life satisfaction. As Warr (2007) suggests the present study includes examining the impacts of several demographic and socioeconomic conditions on work-related happiness: two gender conditions (male and female); age in ranges of nine five-year categories starting with "20 and younger," 21-25, 25-30, and so on to 56+; formal education attainment at five levels from "junior high" to "graduate school;" marriage/children in five categories of "not married," "married, no child," "married with children," and "divorced, no child," "divorced, with children;," and two levels of employment status: full-time and part-time.

Relevant to the full versus part-time influence, the present study focuses on examining how this job characteristic affects job performance. Extensive prior research (most

cited article: Eberhardt & Shani, 1984) supports the conclusion that employment status (full versus part-time) has a minor to no (effect size) influence on facet-specific happiness and part-time versus full-time workers have a higher overall on-the-job happiness but the effect size is small. The present study examines the proposal that job status has both a positive and negative impact on job performance—which depends on the configuration of additional antecedent conditions in the complex causal conditions affecting job performance. The study by Wotruba (1990) is suggestive of the contingent (configural) nature of employment status and performance. The core insights are that the consistency of the direction of employment status impact on performance depends on a confluence of particular simple antecedent conditions and that a simple net effect statement of overall positive or negative job status to performance is folly.

Using survey response data (n = 1,380) to a questionnaire distributed to a random sample of 2500 employees working in career service positions of one state in the southern USA ("career service jobs") are all positions in the state in which the workers do not serve the governor directly, Sloan (2010) examined how demographic and job characteristics influence self-management of job-happiness. From symmetric tests (MRA) and focusing on net effects of demographic influences on job-happiness, Sloan (2010, p. 13) concludes, "... men manage their happiness at work more than women (b = -.153). In other words, compared to men women are more expressive of happiness at work." Sloan (2010, pp. 14-15) also

reports: “Among the demographic variables and controls, whites and married respondents reported less happiness management than the non-whites and non-married workers and older workers manage their happiness more than younger workers. Interestingly, age and race are very strong predictors of happiness management (b = .153 and b = -.142, respectively). Along with men, the older workers and non-white workers put an effort into appearing emotionless (or at least, joyless) while working. In addition, income and education have significant negative associations with happiness management; however, these effects are explained with the addition of the job characteristic variables.”

While the present study focuses on theory and model testing to identify hospitality service-employees very (and low) in happiness and not how well workers manage happiness, the point here is that focusing on the symmetric main effects of demographic variables on happiness management or high (low) happiness conditions provides less useful information than the asymmetric combinatory effects of demographic antecedents in identifying outcomes such as very high happiness or very high job performance. For example, asymmetric outcomes are likely to show that the algorithm of young, unmarried, females, employee with children and low education are low in happiness at work due to the high demands and conflicts of work-family requirements. Considering quintile 1 and 5 for age and education along with two categories each for gender, employment status, and children, the total number of combinations is 32. For the expressed algorithm to be highly accurate/useful in indicating

cases of low happiness, all or nearly all cases fitting into the segment (i.e., ~h ≤ ~age●children●~education● female●~married) would be low in job-happiness. In the Boolean statement the tilde ("~") expresses negation and the mid-level dot ("●") expresses the logical "and" condition. This one statement indicates only that high scores in the negation of happiness will not occur when the complex statement scores are high and high scores in ~happiness will occur for young AND female employees AND having low education AND having children, AND working part-time. The statement says nothing about cases (i.e., employees) with low scores on this one Boolean algebra statement—some of the cases not in this segment will be high and some will be low in happiness.

Because causal asymmetry occurs frequently in real-life, the assumption is often inaccurate that the mirror opposite of the complex statement indicates the opposite outcome. However, theory might suggest that older AND male employees AND high education, AND working full-time are high in happiness (with children not contributing (being unnecessary) in predicting high happiness accurately. (The following empirical study does support both models—the first for not happy-at-work (~h) and the second for happy-at-work (h).)

The theory and analysis does not claim that all employees who are very high (or very low) in job-happiness are identifiable by complex statements of demographic conditions. The theory and analysis only states that some complex statements are accurate in identifying employees who are very high (or very low) in job-happiness. For some cases of the data,

complex demographic-statements alone may be insufficient or irrelevant in identifying very high (low) happy employees or employees with very high (low) job performances; antecedents other than demographics (e.g., emotions relating to job facet-specifics) may be necessary and informative in providing necessary information for identifying such cases.

In general terms, considering highest and lowest quintiles and two categories of gender and the absence and presence of children, the inclusion of five demographics in a study of configural influences of demographics on happiness and job performance implies that combinations of two-to-five of these simple antecedents will be useful in predicting very high (low) happiness-at-work and very high (low) work performance. An "accurate parsimonious configural model" indicates that fewer than all the available antecedents are necessary for accurately predicting an outcome of interest—such as the model indicating that older-married-males working full-time are very high in happiness-at-work with no need to consider whether or not they are fathers.

3d. Work Facet-Specifics

The study proposes configurations of seven work facet-specifics influence happiness-at-work and work performance. The seven appear in a flower-like Venn diagram in the center of Figure 2; this diagram illustrates all possible two-way to seven-way combinations of the seven simple antecedent conditions. Thus, theory includes the proposition that parsimonious models (most likely of three-to-six very high and low

combinations of the seven facet-specific antecedents) associates with very high (low) happiness and very high (low) work performance.

For example, the study proposes and tests the following work facet-specific statements. Very high happiness associates with the combination of full-time employment, low peer conflict, highly pleasing work environment, high-quality interpersonal relationships, and high supervisory support. Very low happiness associates with part-time employment, not joining social activities with colleagues at work (lone), and not having a pleasing work environment. The following Boolean statements represent these two propositions:

h ≤ full-time●~conflict●pleasing●high-quality-interpersonal●high-supervisory-support

~h ≤ ~full-time●lone●~pleasing, where h = happiness and ~h = negation of happiness.

Considering two levels of part versus full-time and quintile 1 versus 5 for the other six antecedents, a total of 128 combinations are possible theoretically for the seven antecedents—but additional combinations can be relevant if only two to six simple antecedents are necessary for predicting high scores in happiness and/or job performance. The general proposition for work facet-specific antecedents is that a few configurations of these antecedents are useful for predicting very high (low) happiness and very high (low) work performance. The following literature review serves as the basis of the selection of work facet-specific antecedents for the current study. Certainly additional facet-specific antecedents may be relevant and are worthy of attention in future research.

Physical work environment. Scholars advocate that the physical work environment (PWE) of services of the entity can impact behavior and can be conducive to marketing services (Kotler, 2000; Shostack, 1985) and should therefore be properly planned and designed. The PWE in service sector likely enters several configural models impacting happiness and job performance because customers and employees are both present during hospitality service enactments. The implications of the physical environment are observable to service providers and recipients which can influence strategic planning and space design (Crosby, Evans, and Cowles, 1990; Lovelock, 1996). Thus, many scholars discuss the physical environment's impact on customers (Babin et al., 1994; Baker, 1986; Bitner, 1990; Donovan and Rossiter, 1982; Foxall and Greenley, 1999; Wirtz and Bateson, 1999; Machleit and Eroglu, 2000; Turley and Milliman, 2000; Wart et al., 1992; Yoo et al., 1998). Environment awareness can cause employees to have a different perspective on the companies they work for and can affect their emotional responses (Grandey, 2000, 2003; Russell and Lanius, 1984; Russell and Pratt, 1980).

Quality-of-Interpersonal Relationships. Howton (1963) refers to interpersonal relations as one of the resulting factors of an organization's work environment while Schutte, Malouff, Bobik, Coston, Greeson, Jedlicka, Rhodes, and Wendorf (2001) propose that interpersonal relations relate closely to emotional intelligence. Interpersonal relations are the interactions between human beings, and in the context of the service industry, refer to an

individual's relations (service contact employee) with management, subordinates (such as probationary service personnel) and colleagues (such as those whose collaborative work or duties are the same). Interpersonal relation quality refers to employees' attitude towards themselves, their bosses and colleagues, in addition to their relation quality awareness and satisfaction.

Interpersonal relation is a dynamic type of relation that can affect an organization's members' mood and attitudes, which affects each individual's performance in the organization. Thus, employees' self-awareness of their interpersonal relations can affect their performance in their organization. In the service industry, management, subordinates and colleagues need interpersonal interactions to communicate and overcome problems that arise in the work place. For a service employee, positive interpersonal relations can allow a person to dispel negative moods and can add to a positive performance. Employees who have a high quality of interpersonal relations can cause a rise in positive moods. Service contact employees in an organization who are able to perceive the quality of interpersonal relationships can have a positive impact on their emotions.

Peer Conflicts. In the large and dense tourism industry, the first line of employees has people from all sorts of working environments and backgrounds with different values and beliefs. These differences are plausible causes of conflicts in an organization. Those

organizations that have positive interpersonal relations can raise moods of employees, yet working situations that often have employee conflicts can have a negative impact on moods.

In different organizations different types of conflicts that occur. As Slack (1997) points out, participants can have different levels of conflict, which include personal conflict, interpersonal conflict, group (the organization) conflict, and inter-group (inter-organizational) conflict. The study uses Slack's interpersonal conflict to discuss peer conflict and its effect on employee moods. Gibson, Ivancevich, and Donnelly (1994) and Slack (1997) propose that conflicts within organizations can arise from factors such as resource limitations, differences in goals, lack of cooperation, communication distortion, differences in pay compensation, power inconsistencies in decision-making. Some studies identify interpersonal conflict behavior triggering negative reactions (Hepbur et al., 1997; Terry et al., 1995). Spector and Jex (1998) points out that frequency of interpersonal conflicts that take place in an organization have a correlation with negative work attitude and dissatisfaction. Frone (2000) offers a similar conclusion in a second empirical study.

As a majority of services require different co-workers, peer conflict may be unavoidable. These conflicts with their peers may affect the mood of employees and a drop in service performance. Thus, for modeling the negation of happiness (~h) and very low in-role performance evaluations (~irp), configurations of facet-specific antecedents are likely to often include service staff employees' conflicts with their peers.

Teamwork. Teamwork refers to the need for cooperation in order to achieve a set goal, which brings about a certain type of interaction between two or more employees; therefore, teamwork requires a high degree of interaction among its members, in attempts to reach common goals (George and Jones, 2002). The team may also as a result face more and perhaps complex interpersonal challenges.

The interaction within members of the team can have a great impact on employees' happiness. As Frijda (1998) describes, happiness within an organization or group can play the role of signaling, which means the transmission of how members of the group feel about their interpersonal relations with others (Hess and Kirouac, 2000). The display of emotions can have a great deal to do with the status of members in the group (Clark, 1999; Collins, 1990; Lovaglia and Houser, 1996; Lucas and Lovaglia, 1998). As a result of constant interaction between team members, members may mimic emotions and the spread of emotions is inevitable; in related research of organization literature, scholars have pointed out that emotions of the team can be transferred, and different types of teams can have different emotional effects on their members (Barsade, 2000, 2002; Bartel and Saavedra, 2000).

Hospitality front-line services often need teamwork to complete tasks, and teamwork indeed may affect team members' interpersonal and emotional link. Service employees need high degrees of teamwork and thus interpersonal conflict with their peers or the quality of the management staff can affect emotions; if the demand for teamwork is less, then it minimizes

the interpersonal interaction. Hence, teamwork is likely to be integral in configurations in modeling happiness as well as IRP.

3e. Happiness-at-work and job performance

Is high happiness-at-work sufficient and/or necessary for high job performance? Given that the literature on happiness-at-work and job performance indicates a small-to-medium effect size for their relationship (Choi and Kim, 2012; Lyubomirsky, King, & Diener, 2005; Zelenski, Murphy, & Jenkins, 2008), the study here proposes that happiness-at-work by itself is insufficient and unnecessary for high job performance.

Thus, assuming that arrow 6 and Figure 2 indicates either sufficiency or necessary, the evidence in the following study does not support the existence of arrow 6. However, the configural theory includes the proposition that happiness in recipes with work facet-specific (arrow 5b in Figure 2) and/or demographic antecedents (arrow 8 in Figure 2) are sufficient in predicting very high work performance. Note also that arrow 9 appears in Figure 2. Arrow 9 represents the proposition that a one or a few facet-specific work antecedents influence IRP in conjunction with a few configurations of demographics and happiness. Such a proposition suggests consideration of very complex configurations is useful for explaining and describing very high (low) IRP.

3f. In-Role Performance (IRP) and Customer-Directed Extra-Role Performance (CDERP)

Effective interaction between service employees and customers may contribute to maintaining a firm's customers, with the feedback from existing customers possessing the potential to attract new customers. Netemeyer, Maxham III, and Pullig (2005) define this performance as "in-role performance" (IRP) and "extra-role performance" (ERP). Arrow 6 in Figure 2 indicates more than just a direct relationship between IRP and customer-directed extra-role performance (CDERP). In the present study Arrow 6 implies sufficiency and necessary—employees with very high scores in IRP will have very high scores in CDERP and employees with very low scores in IRP will have very low scores in CDERP. (The findings below do support the sufficiency implication but not the necessity implication.)

The concept of IRP includes three perspectives. First, Motowidlo and Van Scotter (1994) propose that IRP reflects an organization's performance demands from its employees, which relates to a company's service objectives and critical techniques. Second, Singh, Verbeke, and Rhoads (1996) suggests that the operational definition of IRP comprises items such as product, customer requests, time management efficiency, company resources, customer service volume, and other factors that affect performance quality. Third, Singh (2000) proposes IRP as product production capabilities and quality, with product production capabilities referring to a quantifiable output (such as customers contracting a specific amount) and product quality referring to employees (the management of interaction between customers and employees). This study also explores CDERP. Borman and Motowidlo

(1993) propose that a customer's evaluation of an organization's performance has something to do with contextual customer performance that does not relate to the demands of the employee's IRP. Bettencourt, Gwinner, and Meuter (2001) and Bettencourt and Brown (1997) suggest that CDERP is the extra effort of employees when providing service to customers that raises the quality and positive perception of the service given.

4. Method

The main study includes the use and merging of two files of survey data. Employees and their immediate supervisors of a large-size hospitality service business-group participated in the study. Employees completed a survey covering demographics, work facet-specific information, and a happiness-at-work scale; their supervisors completed IRP and CDERP scales on the performance assessments of these same employees. All surveys were coded by a matched employee-supervisor number and all completed surveys were collected by a team of university professors in person and did not go through the business group's mail distribution center.

Janfusan Fancyworld, the largest (in revenues and number of employees) tourism business group in Taiwan, was the business-group participating in the study. Janfusan Fancyworld includes tourist hotels, amusement parks, restaurants and other related service sectors. The anonymity in participating in the study was assured by letter from the CEO to all participants—both front-line employees and their supervisors and by letter by the

professors (the authors) directing the study. Exploring the differences between happiness-at-work and work-performance in difference employee sectors was not done in the present study to insure employees of confidentiality but would be worthwhile to do in future studies.

4a. Survey Instruments

Except for full versus part-time question item, the work facet-specific questions included 7-point Likert-type scales, ranging from 1 (strongly disagree) to 7 (strongly agree). The IRP and CDERP item responses ranged from 1 to 10, with 10 reflecting the best quality and 1 reflecting the worst quality. Table 1 includes these items and the item-to-total scale correlations and coefficient alphas for the scales.

Table 1 here.

To learn whether or not the questions and topics of the survey were understood and answered by the survey takers, two pre-tests were done. The respondents for first pre-test included key professionals. The respondents for second pre-test included service employees and management staff. Careful revision steps were taken to keep the respondents from making the wrong interpretations and thus altering the accuracy of the data.

4b. Work Facet-Specific Scales

The survey scale for service working environment adopted the measurements in Bitner (1992). After the reliability analysis, two items were deleted and two items were kept

and tested (α =0.77). See Table 1 for details. The assessment of quality of interpersonal relationship was based upon measurements developed by Lin (1998) and further revised. The original measurements of Lin included 6 items. After the pre-test, four items were deleted, and two items remained and tested (α =0.74). The assessment of peer conflicts combines the measurements of interpersonal conflicts developed by Spector and Jex (1998) and Frone (2000). Three items were selected after the pre-test. Also, the content of items was revised and tested (α =0.56) in order to reflect realistic situations. The study uses Van de Vliert and Euwema's (1994) "Job Dependence Scale" to evaluate the degree of dependency on teamwork by the employees. Items were revised based on the results of the pre-test and five items were selected and tested (α =0.78) following reliability analysis.

For measuring happiness-at-work, the survey uses the emotional reaction measurements by Havlena and Holbrook (1986) which comprises seven items (α =0.96). For performance outcomes this study adopts two performance indicators in-use by the business group's appraisals of front-line employees for IRP and CDERP. IRP (α =0.83) and CDERP (α =0.89) include four items respectively, scaling included choices of 1 to 10 to measure service performance levels of employees.

4c. Data Collection Procedure

The two respective surveys were taken had 406 front-line employee respondents and 48 management supervisory respondents. Five supervisors turned-in incomplete surveys

consistently which rendered forty-three effective sets of supervisor surveys; in addition to eliminating the five management staff participant surveys and the thirty-two employee participant surveys that they were paired with, seven other employee surveys were filled incompletely or incorrectly. In total, the study examined 247 of 367 fully completed and useable employee surveys. The manager sample is less than the employee respondents; each manager provided employee performance measures for several employees and this study combines the data from the two sets of sample sources.

Therefore, the management staff and employee pairings totaled 367. A total of 247 of the 367 cases were available for data analysis in this study. Unfortunately, data for 120 cases were carried-away as refuse accidently and were not reclaimable. Twenty-four of the forty-three staff management group were women, making up 55.8% of the group while 83.7% of the group were thirty years-or-older, 39.5% of the group received an education level of beyond college, and 60 percent of the group was married and had children. The majority of the staffs (approximately 81.4%) were employed full-time, with more than 5 years of service. Slightly more than two-thirds of the 247 available respondent employees were women. This gender bias is possibly due to the fact that many service enterprises employ more females than males (such as restaurants). Unmarried individuals comprised 54.8% of the group, with 31.1% of the group between the ages of 26 to 30 while 39.8% of the group had received their highest level of education at the high school level, 29.7% and 27.5%

received degrees from colleges and professional schools, respectively and 76.8% of the employees worked full-time, with most employees, around 40.5%, having one-to-five years of service. Great care was taken to achieve a sample of respondents that was representative of the populations of full and part-time employees, gender, and by years of employment. The biases in respondent shares by gender and employment status match closes with the biases occurring in the total employee population. (A pre-test of the survey sent to 50 part-time and 50 full-time employees indicating that part-time employees' response level was lower; thus, the letter and instructions in the main study gave special attention to the important of both full and part-time employees to complete the survey and the response rates were above 55 percent for both groups.)

4d. Data Analysis

Data analyses include both symmetric statistical tests via correlations, regression analysis, and analysis of variance as well as asymmetric algorithm construction and testing using the software program fsQCA.com (fsQCA = "fuzzy set Qualitative Comparative Analysis"). Testing by fsQCA requires calibration all variable scales into calibrated scales with scores ranging from endpoints of 0.00 for full non-membership to 1.00 for full membership. The fsQCA program provides calibrated scores. Fuzzy-set calibration makes use of external information on the degree to which cases satisfy membership criteria and not inductively derived determination criteria (e.g., not using sample means). To perform

fuzzy-set calibration, criteria are necessary for three breakpoints—0.05 for threshold for full non-membership; 0.50 for the crossover point of maximum membership ambiguity; and 0.95 for the threshold of full membership. Specifying the original values for these three breakpoints, permits the software to calibrate all remaining scores. Calibrated scores are membership scores and not probabilities. For the present report the following simple procedure was used to calibrate the original multiple-value scales. Scores for cases in the highest quintile equal 0.95; calibrated scores for cases in the middle quintile were set at 0.50; calibrated scores for cases in the lowest quintile were set at 0.05. Consequently the fsQCA software set scores for the second quintile to 0.81 and the fourth quintile to 0.82. Table 2 reports the original and calibrated scores for happiness using this procedure.

Table 2 here.

Using the fuzzy set calibration method did not change any of the results in the findings section below. Fuzzy set scores for all original scores also appear in Table 2. The complete coverage of the range for possible scores (from 7 to 49) on the original happiness scale as well as the closeness in values for the mean, median, and mode offers support of the discriminating usefulness of the scale. Ragin (2008) and Woodside (2013) provide numerical examples for calculating consistency and coverage—both researchers stress the first importance of achieving high consistency over high coverage. The primary importance of consistency relates to the equifinality tenet the existence of multiple configurations of

antecedent conditions useful in predicting high scores of an outcome condition means that any one configuration will have a low coverage of cases.

In fsQCA the consistency and coverage indexes are the metrics indicating the useful of a given model of a simple antecedent condition or a set of complex antecedent conditions for predicting scores in an outcome condition. The consistency index gauges the degree to which the cases share the antecedent condition (simple or complex) in displaying the outcome in question—consistency is analogous to correlation in statistical analysis. The coverage index in fsQCA assesses the degree a simple or complex antecedent condition (recipe) "accounts for" instances of an outcome condition—coverage is analogous to r2 in statistical analysis.

The score for a complex antecedent condition is equal to the lowest score for the simple antecedent conditions within the complex statement—this lowest score indicates the shared membership the simple conditions have within the configural statement. Using a thought experiment (hypothetical fuzzy set score data) for five employees, the appendix numerical examples of computing membership scores for complex antecedent conditions. The guidelines used in the study here is that an fsQCA model is useful when its consistency is equal to or above 0.85 and its coverage is above 0.00. A high consistency score (.e.g. consistency = 0.85) indicates high membership scores in the outcome condition for nearly all cases with high scores in the simple or complex antecedent condition with most other cases

fitting an asymmetric sufficiency distribution (i.e., panel c in Figure 1). See Ragin (2008) for detailed training on using fsQCA.

5. Findings

The findings here do not include responses for four cases of data. The four cases are employees in the oldest age group (≥ 56 years of age). The four members in the oldest age group had significantly lower happiness, IPR, and CDERP scores in comparison to the cases in the three age groups prior to this group. Age as an antecedent condition in the configural analyses plays no role in the models with the inclusion of the above 55 years-of-age group. Possibly the findings for the oldest age group members indicates that business group needs to devote special attention and nurturing to the oldest-aged front-line employees.

The XY plots for happiness, IRP, and CERP with the other demographics and work facet-specific scales exhibited linear significant and non-significant relationships. From the dominant logic perspective of statistical analysis, the findings for the present study are similar to the findings in prior studies on employees' happiness-at-work and supervisors' assessments of employees' performances—the relationships are significant but the effect size is small. The correlations of happiness-at-work and IRP and CDERP equal 0.17 and 0.18 respectively.

Table 3 here.

From a group level perspective, the quintile analysis in Table 3 indicates happiness does not relate significantly to IRP. However, testing only the highest and lowest quintiles indicates a significant and medium-to-large effect size relationship ($\varphi 2 = .228$, a medium-to-large effect size). But, examining Table 3 supports the conclusion that very high happiness (quintile 5) does not associate consistently with very high (quintile 5) IRP; in fact, 7 of the 49 cases in Q5 have very low IRP assessments. The similar lack of consistency occurs for very low happiness and very low performance. Four cases occur whereby very unhappy employees have very high happiness. The findings do not support a strong symmetric relationship between employee happiness-at-work and performance assessments. Rather than ending the analysis with statistical analysis, transcending a net effects view to analysis by algorithms considers causal recipes that do provide high consistency of cases in all four corners of Table 3. Conclusion: arrow 6 in Figure 2 receives insufficient support—high happiness-at-work alone does not predict high performance consistently. High happiness may be a contributing factor to high performance in some configurations with additional antecedents—the findings below do support this perspective.

5a. Findings for Models for Very High Happiness and Very High Performance

Figure 3 presents many findings of the propositions of the study that appear in Figure 2. Figure 3 includes three complex antecedent demographic models (L, T, and X) that associate with high happiness (symbolized by the blue bird)—two models include males (one

for young and one for older male employees) and one model includes females (older, not married, low in education, with children—but not necessarily at home). Figure 1 shows the three complex antecedent demographic models (L, T, and X_ in Figure 3 that have consistent associations with working full-time, high qip (quality of interpersonal relationships), and high pwe (physical work environment). Here are the three models in Figure 3 with pwe as the outcome condition:

$$\text{Model L:} \quad A \bullet E \bullet M \bullet G \sim C \leq pwe \qquad (1)$$

$$\text{Model T:} \quad A \bullet \sim E \bullet \sim M \bullet \sim G \bullet C \leq pwe \qquad (2)$$

$$\text{Model X:} \quad \sim A \bullet M \bullet G \bullet \sim C \leq pwe \qquad (3)$$

where A = older; E = high education; M = married; G = male; and C = children.

Note that the presence of older (A) and younger (~A) appears in different configurations indicating high pwe—the same holds for other simple antecedent conditions. Also, education (E) does not appear in model X. The three models indicate three different "complex causal conditions" (Ragin, 1999) associating with high pwe. Model T describes older married males with high education and no children—a complex configuration that is likely to generate high comfort and less stress in life compared to some other configurations. Later in this article, one of two models associated with the negation of pwe (i.e., ~pwe) to be the mirror opposite of Model L: young single women with children and little education—which appears as Model

G in Figure 5. In this instance, one model for ~pwe versus pwe indicates substantial causal symmetry does occur for these two configurations.

Figure 3 here.

These three demographic models associate consistently with high scores in several work facet-specific conditions (not all of facet-specific conditions were tested). All three demographic models associate with high scores in full-time, physical-work environment pleasing (pwe), and high quality of interpersonal relationships (qip). The three demographic models associate with high happiness consistently and high IRP consistently. The following two models are additional models associating consistently with high happiness ("+" include Boolean algebra means "or"; "gender" means male and "~gender" means female): ~age●married●gender●~children + age●edu●married●gender. Thus, young males with no children who are married and older males with high education who are married are happy-at-work consistently. These findings complement and expand on the findings in the literature focusing on gender, age, and education influences on happiness at work (e.g., Clark, 1997; Karatepe, et al., 2006); Sousa-Poza & Sousa-Poza, 2000); this body of work focuses on the demographic antecedents of happiness and the findings here expands and deepens the field by configuratively modeling demographics, happiness, and quality of work performance. The configurative findings in the present study suggests the need for revising Karatepe et

al.'s (2006, p. 547) conclusion, "The inclusion of demographic variables in the equations has not changed the path-analytic results for the hypothesized relationships."

Arrow 6 in Figure 3 shows high happiness does not associate consistently with high IRP (consistency = 0.65). What additional ingredients are necessary to be present for very high or very low happiness to associate consistently with very high IRP? Table 4 includes the complex antecedent models resulting in very high in-role performance assessments by managers (IRP). High supervisory support appears among the ingredients in six of the seven models in Table 4. High happiness appears in five, low happiness appears in one, and happiness is not an ingreident in one fo the seven.

Figure 3 here and Table 4a and 4b here.

5b. Very Low Happiness and Very High IRP

Note in Table 4a that model 4 includes the negation of happiness with additional ingedients that predict high IRP consistently. These cases are employees with many years of service, experiencing low peer conflict, high team work demand, who do not join in social activities with colleagues, ahd have low supervisory support. Table 4b sheds additional light on low happiness and high IRP. Table 4b includes models of demographics and happiness associating with high IRP. Two of the nine models in Table 4b include very low happiness and additional ingredients associating with very high IRP.

The first of these models includes older employees with many years of service, low in education, married, with children and working full-time, without gender relevancy to the model. The second of these two models includes unhappy females with children at home, not married, low in education, and young with few years of service—a configuration that likely highly relates to high family-job stress. Both models may assoicate with low salaries (a guess here because education is very low). The main point here is that modeling such complex configurations helps to clarify the low happiness and high peforming employees.

5c. IRP and CDERP

The findings in IRP indicate that high IRP alone associates consistently with high CDERP (consistency = 0.84). However, a few (n = 9) cases occur where employees score low on IPR but high on CDERP. These nine cases appear in the top left corner of the XY plot in Figure 4. Space is not devoted here to examining such cases but such a finding indicates that case level analysis is possible while generalizing to the total sample—a particular advantage of using qualitative comparative analysis.

Figure 4 here.

Figure 4 shows that more than three-fourths of the cases very high in IRP are very high in CDERP (n = 92). Thus, consistency for very high IPR in predicting very high CDERP equal to 0.835 indicates that the simple antecedent condition of high IRP alone is sufficient for estimating high CDERP. Even higher consistency is achievable by including

facet-specific, happiness, and /or demographics with IRP in modeling high CDERP. (This report does not include this level of complexity.)

5d. Findings for Models for Very Low Happiness and Very Low Performance

Figure 5 includes two complex demographic antecedent models with consistency for high unhappiness (symbolized by the raven in Figure 5) and high ~IRP. Model D represents young married males low in education. Model G represents young single females who are low in education with children.

Figure 5 and Tables 5a and 5b here.

Models D and G also relate consistently to the negation of finding physical work environment pleasing (~pwe) but do not relate consistently to full versus part-time employment status. As Figure 4 shows, the negation of IRP (~IRP) relates to the negation of CDERP (~CDERP) consistently. Given these findings and the findings for IRP and CDERP, the IRP and CDERP tends toward being symmetrical for the substantial majority of cases.

5c. Work Facet-Specific and Happiness Configurational Models Relating to Negation of IRP

Table 5a includes four models of work facet-specific models that relate consistently to high ~IRP (i.e., very low performance). All four of these models include the negation of full-time employment (i.e., high part-time employees) with very few years of service

(~yservice). Three of the four models include low happiness as an ingredient; one includes high happiness.

5d. High Happiness and Low Performance.

The one complex model for ~IPR that includes high happiness also includes low supervisory support, low quality of interpersonal relationships (~qip), and very few years of service (~yservice), ~lone, high peer conflict, and high job teamwork demands (dteam). Thus, part-time employees experiencing little supervisor support, high peer conflict, and new to the job, with high requirements for team work, and poor quality of interpersonal relationships are one answer to the conundrum of very high happiness and very low performance. This new employee may be very happy just to be receiving a salary. However, this recipe that predicts very low performance accurately remains unclear and requires additional study.

Table 5b sheds additional light on the occurrence of high happiness and low performance. Table 5b includes one such model (model 6). Model 6 includes females new to the job, older, working full-time, unmarried, with (most likely grown) children, with low education. Being new to the job may be a principal ingredient in their very low IRP scores as well as being high in happiness.

5e. Work Face-Specific Configurations for Very High and Very Low Happiness

High scores for five work contexts associate with very high happiness. All the configurations that do so include high supervisory support as an ingredient. Details for each

of the five work facet-specific configurations appear in Table 6a. High quality of interpersonal relationships (qip) occurs in five of the six models; the negation of qip (~qip) does not occur in any of the models. These models support the importance of carefully designing specific aspects of the workplace to achieve the objective of high happiness.

Tables 6a and 6b here.

High scores for five work contexts associate with very low happiness. All five include either ~qip and/or the negation of pleasing working environment (~pwe). Details appear in Table 6b. These work facet-specific findings for the configurations affecting the negation of happiness are not mirror opposites of the configurations affecting happiness. This general finding supports the tenet of causal asymmetry--the configurations of conditions serving to increase happiness are distinct from the configurations of conditions serving to increase unhappiness.

6. Discussion, Limitations, and Contributions

The study here contributes to moving beyond the issues of whether or not happiness-at-work influences job performance, the size of the effect of this relationship, and whether or not the impact is always positive. The study contributes to theory and research by proposing that the impact of employee happiness-at-work on manager's assessment of employee performance depends on configurations of employee demographics and employees' judgments of work facet-specific factors. Rather than looking narrowly at happiness-at-work

and managers' assessments of employee work performance, a more complex in-depth stance is necessary to learn the combinations of conditions whereby high happiness associates with very high as well as very low performance. Separately, theory and empirical reports need to consider the configurations associating with very low happiness and very low versus very high managers' assessments of employee work performance.

Front-line, middle, and senior managers may seek to focus on all the complex antecedent conditions associating with high versus low quality of employee performances. These complex conditions are likely to include recipes with very high happiness, very low happiness, and happiness not in one or more of the recipes. Identifying these alternative complex configurations is possible and a worthy objective of theory, research, and practice.

The high importance of happiness-in-many-contexts relating to very high (low) quality of work assessments by managers is a key finding of the present study. Research to advance theory of how happiness affects performance is worthwhile but needs to embrace moving beyond a net-effects symmetric perspective to the construction of useful algorithms for predicting happiness as well as for predicting the conditions when happiness associates with very high (low) quality of work performance.

6a. Confirming the Four Tenets of Configural Theory

The findings support the four tenets of configural theory. The multiple configurations associating (leading to) high values in happiness and in-role performances confirm the tenet

of equifinality. Consequently, a single configuration may be sufficient but it is not necessary for accurately predicting high employee happiness or high employee quality of work performance. The equifinality tenet extends to the valences of simple antecedent conditions, that is, both positive and negative associations for the same simple antecedent condition that appear in different complex antecedent conditions can associate with high scores for cases in an outcome condition. The findings appearing in Figure 3 and Tables 4a and 4b support this perspective. For example, in Table 4a the findings for model 3 include a positive overall happiness-in-the-combination association but model 4 in Table 4a shows a negative happiness-in-the-configuration association with high in-role-performance.

The findings confirm the second tenet of configural theory—configural relationships that are accurate in predicting very high happiness and high quality of work performance are asymmetric and indicate sufficiency but not necessity. Low scores on these configurations associate with both low and high scores on the two outcome conditions (very low and very high happiness or performance). This perspective is another way of saying that linear causality is rare in real-life and researchers should discard the view of single-model sufficiency and necessary. Thus, researchers should end reporting in terms of "critical importance" and "key success factors" since no one condition is likely to be both sufficient and necessary.

The findings confirm the third tenet of configural theory. Achieving very high happiness and very high quality work performance are complex undertakings. The examination of net effect and two and three-way interactions are insufficient in describing and understanding very high happiness and performance. Useful models in describing and understanding such outcome conditions likely requires embracing a configural stance such as crafting and testing algorithms via fsQCA. The findings confirm the fourth tenet. The findings support a causal asymmetry perspective—the configurations associating very high quality of work performance are not the mirror opposites of the configurations associating with very low work performance—the same conclusion applies for happiness-at-work. Having a deep accurate understanding of what brings about high quality of work performance only provides partially accurate hints of the causes of very low quality of work performance. Modeling both very high and very low quality of work performances and happiness are necessary.

6b. The Employee Happiness-at-Work and Manager's Assessment of Quality of Employee Performance Relationship

From the stance of statistical testing of the hypothesis, the present study confirms both the small and medium-to-large effect size of the relationship of employees' happiness-at-work and managers' assessment of quality of employees' work performance. Effect sizes are likely small but significant when taking into account the total sample of data

in a study; effect sizes are likely to be medium when limiting the analysis to the very low and very high quintiles of respondents for happiness-at-work and managers' assessments of quality of employees' work. These findings complement the findings for configural analysis.

From the stance of configural analysis, high happiness-at-work alone is insufficient is explaining high quality of work as assessed by managers. However, incorporating facet-specific work antecedents or demographics with happiness-at-work results in several complex configurations that are sufficient in explaining and predicting high work performance as assessed by managers—as well as low quality of work performance. If theory and practice seeks to understand how happiness affects high work performance, scholars' and practitioners' insight will improve by including work facet-specific contextual and/or demographic information in crafting complex statements along with happiness to explain high work performance. The same perspective applies for increasing insight for explaining very low work performance. Unhappiness alone is not informative sufficiently to adequately explain very low work performance. However, the negation of happiness in combination with facet-specific simple antecedents combines into complex statements (algorithms) that do adequately explain very low work performance.

6c. Happiness, IRP, and CDERP

Happiness alone is insufficient for predicting CDERP. However, IRP is sufficient alone for explaining CDERP. The findings of the study support the perspective that

employees need to perform the basic in-role work requirements very week to achieve high evaluations in customer-directed extra role performances. While not included in this study, additional analyses indicate that the inclusion of a few work facet-specific antecedents with IRP does improve the configural power in explaining CDERP. These findings are available from the authors by request.

6d. Limitations and Suggestions for Future Research

The study here develops and explores configural theory of hospitality service employees' happiness and work performance. A general confirmation of the theory and findings for alternative configurations requires going beyond one empirical study in one industry in one country. One helpful step is to replicate the survey one within the same industry to additional firms in the same country as well as additional country contexts.

The predictive accuracy of configural models useful in this study needs to be tested using holdout samples of cases. This step can be taken by splitting the present sample into two subsamples randomly and repeating the analyses along with using the models useful for the first subsample to test their predictive accuracy on the cases in the second sample, and vice versa. This second step was taken in the present study and the findings proved substantial support for the usefulness of the models in the present study. (Details of predictive validity tests are available by request to the authors.)

Managers' judgments of employees' job performances are likely to include biases and inaccuracies that are overlap in similarity to some extent with employee's self-assessments of the own job performances. Given that manager's assessments are more likely to affect job retention, promotion, raises, and formal written evaluations and be less self-serving than employee self-evaluations (Heidemeier & Moser, 2009), the use of managers' evaluations of employees' performances does appear to be worthwhile. Still, the inclusion of employees' own evaluations of job performances—and comparisons for the extent of agreement versus disagreement— would have been a valuable addition to the present study. Future work should include enabling this step to be taken.

6e. Keeping One Eye on Cases and the Second on the Sample

As McClelland (1998) emphasizes, the focus on creating and testing theories based on algorithms permits generalizing beyond the individual case in data set and yet permits the examination of individual cases in the analytical output. Both executives and employees benefit and will usually appreciate being able to receive feedback on performances at the individual, case, level rather than the dominant scholarly practice of reporting findings only at the level variables. The use of qualitative comparative analysis to study causal complexity in employee happiness-at-work and quality of work performance offers breakthroughs in formulating theory and understanding how contexts affects work outcomes. The present study confirms Ragin's (1999, p. 1228) tenet, "It is much more fruitful to allow for the possibility

that a given outcome may follow from a variety of different combinations of theoretically relevant causal conditions" [than limiting one's perspective and testing to a single theoretical statement].

6f. Societal Implications

Taking great care is necessary by hospitality executives to avoid using complexity theory, configural analysis, and the findings in this article to exclude job applicants because their demographic profiles associate with on-the-job unhappiness and low job performances. The moral issues and unintended, negative, brand-image consequences of such decisions can overwhelm any immediate benefits from applying such profiling algorithms (cf. Carter, 2003). The moral and long view that deserves management attention may be that firms in the hospitality industry need to accept a substantial measure of responsibility in investing in growing the social capital (Bourdieu, 1977, 1986) of its front-line job applicants and employees. Given that many hospitality firms (e.g., McDonald's, Burger King, and Motel 6) focus some on building sustainable relationships with customers living in configurations of low-income, low-education, and single-female head families ("marketing to the bottom of the pyramid," Godin, 2013), the creation of "action research programs" (Greenwood & Levin,) to increase the social capital of employees who are also members of these low social capital customer segments has great long-term moral and monetary profit potential.

Appendix: Examples of Computing Scores for Complex Antecedent Conditions

Consider the following descriptions of five employees. Bob is very young with little education, he is unmarried with no children, he works part-time, he is a new employee, he is very happy-at-work; Bob's manager rates Bob's job performance to be very low.

Edwina is very young with little education, unmarried, children at home, she works full-time, three years of working in the firm, she is very unhappy-at-work; Edwina's manager rates Edwina's job performance to be very high.

Helen is 54 years old, married, grown children, 18 years working in the firm, working full-time, very little education, very happy at work; Helen's manager rates her job performance to be very high.

Linda is new to the firm, 24 years old, university graduate, married, no children, working full-time, very happy-at-work; Linda's manager rates her performance to be acceptable but not high, "she has a long way to go but she shows promise."

Consider the following complex antecedent conditions:

Model D: ~age•~education•~married•~children•gender

Model R: ~age•~education•~married•children•~gender

Model V: ~age•education•married•~children•~gender

with ~age = the negation of age (i.e., high score means very young);

~education = very low education score

~married = not married

~children = no children

~gender = female (thus, gender = male).

Using the logical "AND" in Boolean algebra, the membership score for the complex statement is equal to the lowest score among the scores for the simple antecedents in the complex statement. Computing the complex antecedent scores for models D, R, and V, for the four employees:

case	age	education	married	children	gender	D	R	V
Bob	.01	.01	.01	.01	.99	.99	.01	.01
Edwina	.01	.01	.01	.99	.01	.01	.99	.01
Helen	.98	.01	.99	.99	.01	.01	.01	.01
Linda	.06	.82	.99	.01	.01	.01	.01	.82

Bob's score for ~age = .0.99; his score for ~education = 0.99; his score for ~married = 0.99; his score for ~children = 0.99; his score for gender = 0.99. Thus, Bob's score for model D equals 0.99—the lowest score among the five simple antecedent conditions. Here are Linda's scores for the simple antecedent conditions in Model V: ~age = .94; education = 0.82; married = 0.99; ~children = 0.99; ~gender = 0.99; Linda's score for model V is equal to the lowest score among the five values (i.e., .82).

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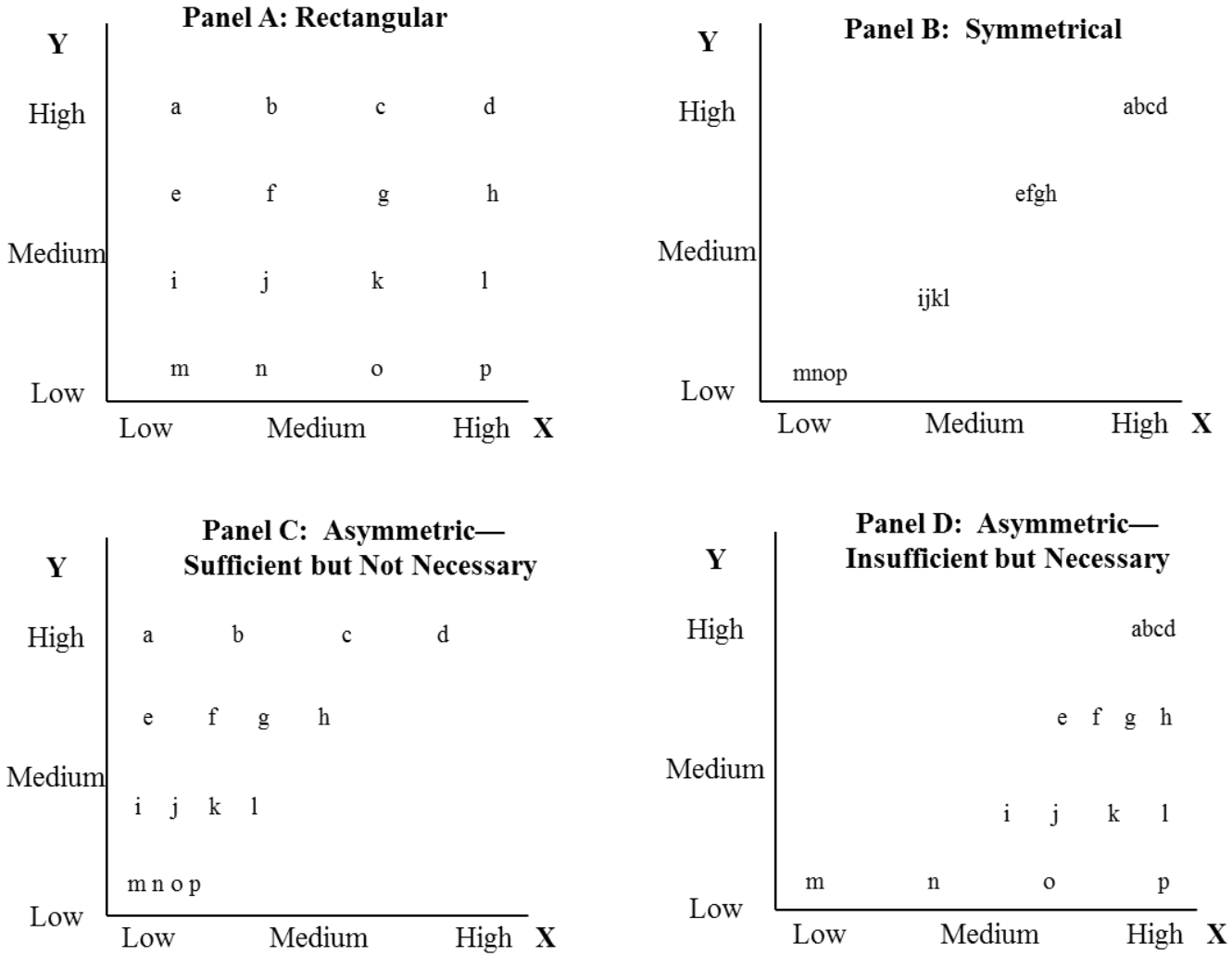

Figure 1
Rectangular, Symmetrical and Asymmetrical Relationships: Hypothetical Plots of 16 Cases (a through p) for Outcome Y and Complex or Simple Causal Statement X

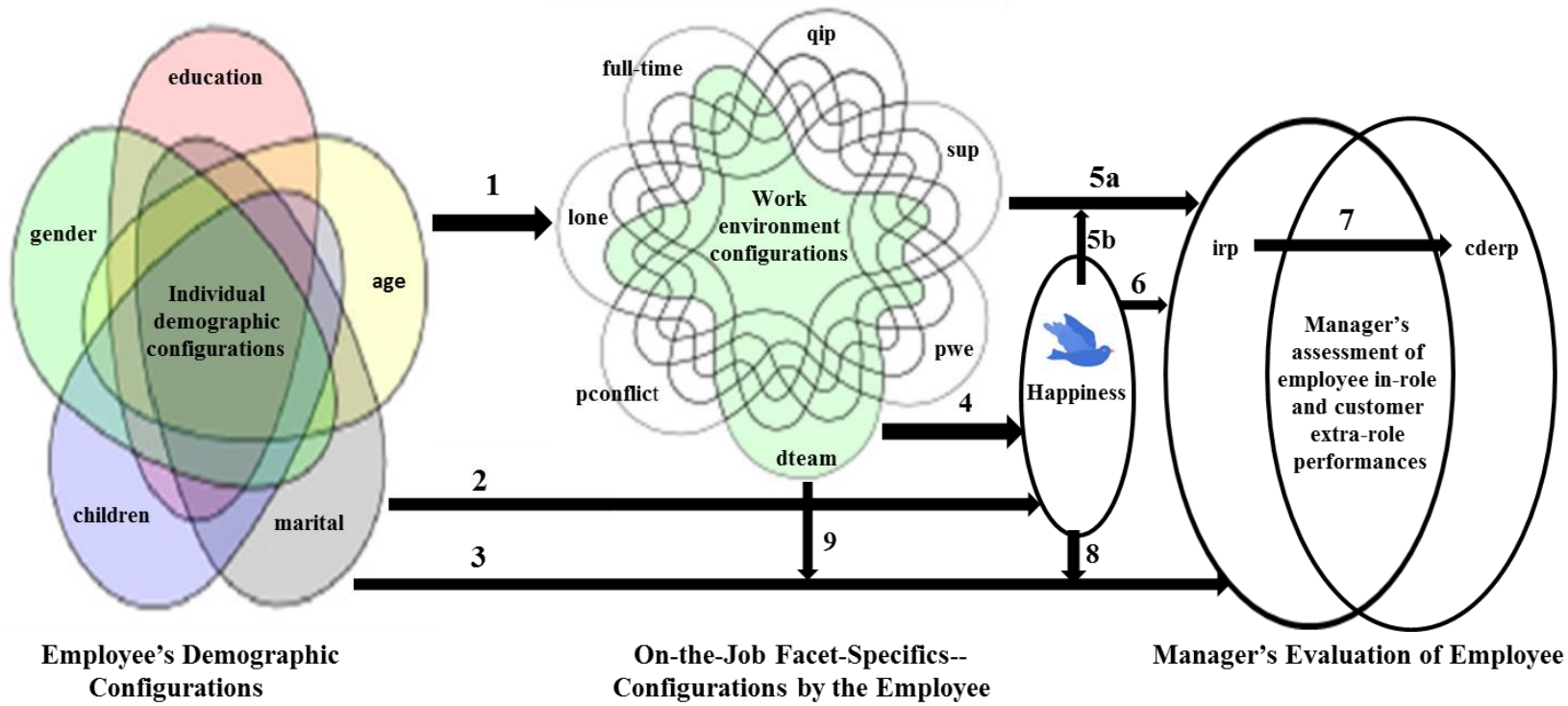

Figure 2
Configural Modeling Associations with Very High/Low Hospitality-Service Employee Work Contexts, Very High/Low Happiness, In-Role, and Customer-Directed Extra Role Performances

Key: dteam = job demands of teamwork; cderp = customer-directed extra role performance
irp = in-role performance; lone = do not join social activities with my colleagues
pconflict = peer conflict; pwe = physical work environment pleasing
qip = quality of interpersonal relationships; sup = supervisor support

Table 1
Construct Scales and Coefficient Alphas (Corrected Item to Total Correlations) (Decimal Points Omitted)

Work Facet-Specific Antecedents (and Outcomes)

- Supervisor support (supsup) (65)
  - When I encounter difficult, my supervisor gives me support. (48)
  - My supervisor clearly understands what I think and how I feel. (48)
- Quality of interpersonal relationships (qip) (74)
  - I feel very happy about working with my colleagues. (58)
  - Most of colleagues are very nice that they help each other actively. (58)
- Physical work environment (pwe) (77)
  - Overall, the present working environment is what I want. (62)
  - I work at a pleasant environment. (62)
- I seldom join social activities with my colleagues. (lone)
- Peer conflict (pconflict) (56)
  - I usually have a conflict with my colleagues because of issues of work. (38)
  - There is usually an argument between colleagues and me. (31)
  - Colleagues always ascribe problems of work to me. (41)
- Demands of teamwork (dteam) (78)
  - The assistance from colleagues can help me collect useful information and suggestion on my job. (55)
  - Teamwork eases the loading of responsibility on job. (60)
  - In order to achieve goal, I have to cooperate closely with my colleagues. (69)

Outcomes

- Happiness-at-work (hap) (96)
  - Happy / unhappy (87)
  - Pleasant / unpleasant (88)
  - Satisfied / unsatisfied (85)
  - Content / discontent (83)
  - Enjoyable / non-enjoyable (80)
  - Comforting / uncomforting (82)
  - Gratifying / non-gratifying (86)
- In-role performance (irp)(83)
  - This employee is qualified with the knowledge of the company, and competitors' products/ service. (58)
  - Overall job performance is approved to reach the set goal. (78)
  - This employee is accurately accomplishing job regulations (59)
  - Follows requirements of the company to serve customers (66)
- Customer-directed extra-role performance (cderp) (89)
  - The degree of this employee is willing to pay extra time or efforts to make a customer satisfied (68)
  - Even if beyond job requirements, this employee still takes initiatives to assist a customer (83)
  - How often does this employee voluntarily go out of his/ her way to make customer contented? (71)
  - How often does this employee goes above and beyond job expectation or "call of duty" while serving customers? (78)

Table 2
Original and Calibrated Happiness Scales and Frequency of Cases by Scores

Observed Original	Using 5 scores Calibrated	Using Fuzzy Scores Calibrated	Frequency	Percent	Cumulative Percent
7.00	.05	.01	6	2.5	2.5
13.00	.05	.03	1	.4	2.9
14.00	.05	.04	9	3.7	6.6
15.00	.05	.05	1	.4	7.0
16.00	.05	.06	2	.8	7.8
18.00	.05	.07	6	2.5	10.3
20.00	.05	.08	2	.8	11.1
21.00	.05	.09	14	5.8	16.9
22.00	.05	.16	6	2.5	19.3
23.00	.18	.23	2	.8	20.2
24.00	.18	.24	10	4.1	24.3
25.00	.18	.25	5	2.1	26.3
26.00	.18	.28	4	1.6	28.0
27.00	.18	.32	9	3.7	31.7
28.00	.50	.36	27	11.1	42.8
29.00	.50	.37	10	4.1	46.9
30.00	.50	.45	6	2.5	49.4
31.00	.50	.50	9	3.7	53.1
32.00	.50	.57	8	3.3	56.4
33.00	.50	.65	8	3.3	59.7
34.00	.82	.71	7	2.9	62.6
35.00	.82	.77	16	6.6	69.1
36.00	.82	.82	12	4.9	74.1
37.00	.82	.86	5	2.1	76.1
38.00	.82	.90	7	2.9	79.0
39.00	.95	.92	9	3.7	82.7
40.00	.95	.94	8	3.3	86.0
41.00	.95	.95	6	2.5	88.5
42.00	.95	.96	12	4.9	93.4
43.00	.95	.97	3	1.2	94.7
44.00	.95	.98	3	1.2	95.9
45.00	.95	.99	2	.8	96.7
46.00	.95	.99	2	.8	97.5
47.00	.95	.99	2	.8	98.4
48.00	.95	1.00	1	.4	98.8
49.00	.95	1.00	3	1.2	100.0
Total			243	100.0	100.0

Mean	30.53
Std. Error of Mean	0.58
Median	31.00
Mode	28.00

Notes. The use of either set of calibration scores resulted in nearly identical findings in the study. The fuzzy set scores results from the use of the calibration sub-routine in the software fsQCA with the original to fuzzy set scores:

41 = 0.95
31 = 0.50
15 = 0.05.

The findings in the main analysis follows from the use of the 5 scores calibrations.

Table 3

Hospitality Employees' Happiness and Managers' Evaluations of Employees' In-Role Performances

			In-Role Performance Quality (IRP)					
			Very low				Very high	
			1.00	2.00	3.00	4.00	5.00	Total
Very low	1.00	Count	14	8	13	10	4	49
		% within happy_segs	28.6%	16.3%	26.5%	20.4%	8.2%	100.0%
Happiness Quintiles for Hospitality Employees	2.00	Count	12	14	10	11	13	60
		% within happy_segs	20.0%	23.3%	16.7%	18.3%	21.7%	100.0%
	3.00	Count	10	9	9	4	7	39
		% within happy_segs	25.6%	23.1%	23.1%	10.3%	17.9%	100.0%
	4.00	Count	9	10	14	6	11	50
		% within happy_segs	18.0%	20.0%	28.0%	12.0%	22.0%	100.0%
Very high	5.00	Count	7	6	10	12	14	49
		% within happy_segs	14.3%	12.2%	20.4%	24.5%	28.6%	100.0%
		Count	52	47	56	43	49	247
		% within happy_segs	21.1%	19.0%	22.7%	17.4%	19.8%	100.0%

Possibly surprising findings: cases do occur of very unhappy employees with very high IRP scores and vice versa.

Notes. Table 1 reports a quintile analysis of hospitality employee happiness and their managers' in-role performance (IRP) evaluations. Even though the findings for the total sample are not significant statistically, note the modest positive relationship—14 versus 4 employees very low in happiness are very low versus very high in IRP, respectively. The distribution of the 49 very happy employees includes 14 with very high IRP scores and only 7 with very low IRP scores. However, the fsQCA shows how different configurations of complex antecedent conditions for very unhappy versus very happy hospitality employees associate with high IRP scores as well as how different complex antecedent conditions for very happy hospitality employees associate with very low versus very high IRP scores. Total sample: $\varphi = .259$; $p < .413$; $\varphi^2 = .07$ (very small effect size). Q1 and Q5 happiness and five quintiles for IRP: $\varphi = .299$, $p < .068$; $\varphi^2 = .09$ (medium effect size). Comparing Q1and Q5 for both happiness and IRP: $\varphi = .478$, $\varphi^2 = .228$ (medium-to-large effect size).

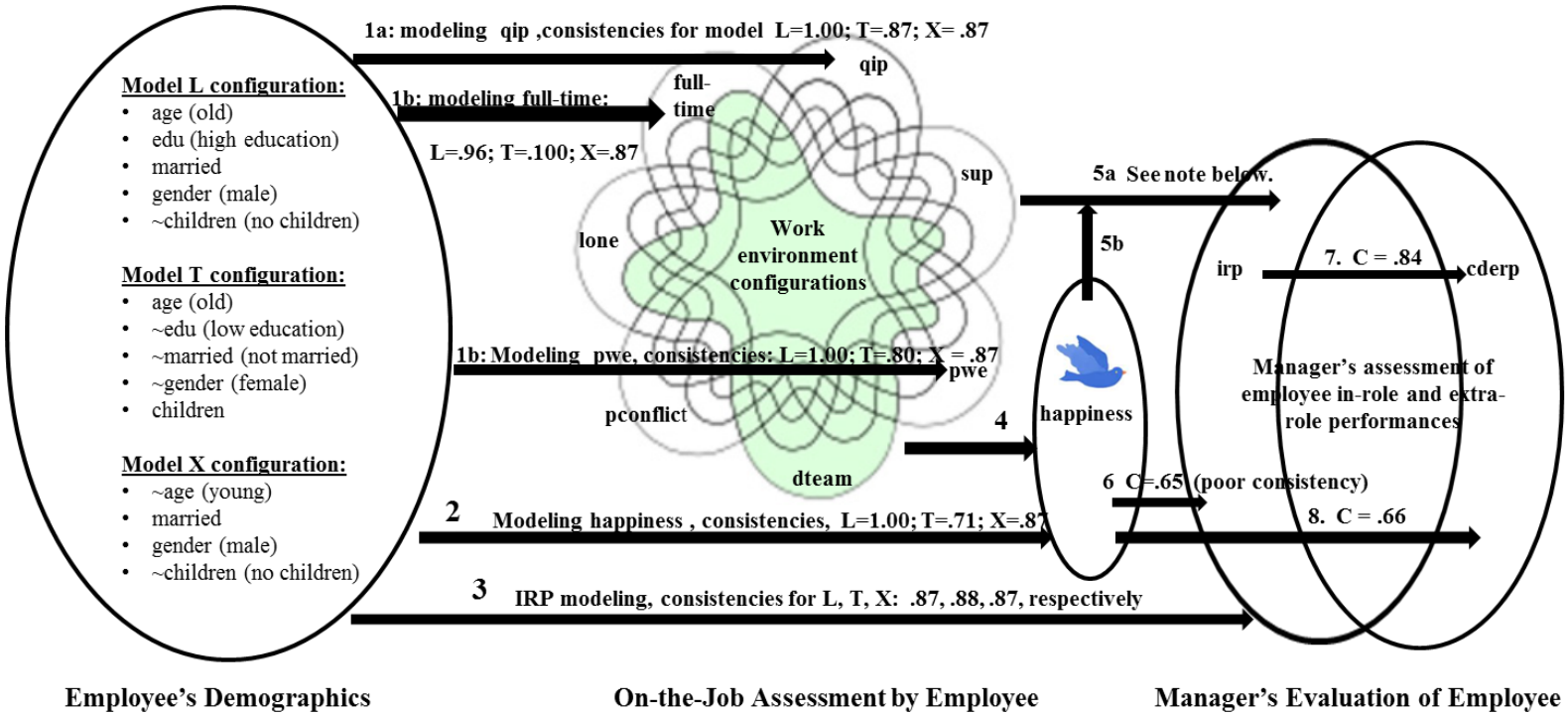

Figure 3

Consistencies of Configural Models for Hospitality-Service Employee Context Outcomes, Very High Happiness, and Very High In-Role and Very High Customer-Directed Extra Role Performances

Key: **C = consistency; for highly consistent model in associating antecedent configuration with the outcome, C ≥ .85**
dteam = job demands teamwork; cderp = customer-directed extra role performance; irp = in-role performance;
lone = do not join social activities with my colleagues; pconflict = peer conflict; pwe = physical work environment pleasing
qip = quality of interpersonal relationships; sup = supervisor support; yservice = years of service; ● = logical "and" condition; ~ = negation

Notes on findings. For arrow 4 findings, see Table 6a; high scores for a few facet-specific configurations predict high happiness. Happiness alone does not offer a consistent model for explaining high irp or cderp. Arrows 5a,b include 7 highly consistent models, 5 for high happiness; one for unhappiness; one without happiness entering the model.
An example model for arrows 5a,b: high IRP ≤ pwe●dteam●~pconflict●~lone●supsup●~qip●~yservice●happy, C = .90.

Table 4a
Configurations of On-Job Happiness and Additional On-Job Antecedents Associating with Managers' Judgments of Employees' High In-Role Performances (IRP) (Arrows 5 and 5b in Figure 3)

Model		raw coverage	unique coverage	consistency
1	pwe13_c*~dteam_c*~pconflict_c*lone_c*supsup_c*qip_c*yservice_c	0.125820	0.020845	0.911004
2	hap_c*pwe13_c*dteam_c*~pconflict_c*~lone_c*supsup_c*~qip_c*~yservice_c	0.155635	0.053567	0.903133
3	hap_c*pwe13_c*~dteam_c*~pconflict_c*~lone_c*supsup_c*~qip_c*yservice_c	0.111951	0.003737	0.929015
4	~hap_c*~pwe13_c*dteam_c*pconflict_c*lone_c*~supsup_c*qip_c*yservice_c	0.110290	0.015032	0.949250
5	hap_c*pwe13_c*dteam_c*~pconflict_c*~lone_c*supsup_c*qip_c*yservice_c	0.129973	0.024998	0.975686
6	hap_c*pwe13_c*~dteam_c*pconflict_c*~lone_c*supsup_c*qip_c*yservice_c	0.114609	0.007474	0.981508
7	hap_c*pwe13_c*dteam_c*pconflict_c*lone_c*supsup_c*qip_c*yservice_c	0.104394	0.004817	0.955893
	solution coverage: 0.249481			
	solution consistency: 0.862970			

Table 4b
Configurational Models for Demographics and Happiness for High In-Role Performance

Model		raw coverage	unique coverage	consistency
1	~yservice_c*~age_c*~edu_c*married*~gender*children*~fulltime	0.041608	0.022257	0.939961
2	yservice_c*age_c*~edu_c*married*children*fulltime*~hap_c	0.122498	0.084046	0.923607
3	yservice_c*age_c*edu_c*married*gender*fulltime*hap_c	0.067021	0.027988	0.932948
4	~yservice_c*~age_c*~edu_c*~married*~gender*children*fulltime*~hap_c	0.027822	0.006395	0.912807
5	~yservice_c*~age_c*edu_c*married*gender*~children*~fulltime*hap_c	0.026078	0.006727	1.000000
6	yservice_c*age_c*~edu_c*~married*~gender*~children*fulltime*hap_c	0.056889	0.036708	0.938356
7	~yservice_c*~age_c*edu_c*married*~gender*~children*fulltime*hap_c	0.045844	0.026493	0.924623
8	~yservice_c*age_c*~edu_c*~married*~gender*children*fulltime*hap_c	0.025828	0.003737	0.906705
9	~yservice_c*age_c*~edu_c*married*gender*children*fulltime*hap_c	0.051491	0.012790	0.932331
	solution coverage: 0.270908			
	solution consistency: 0.894435			

Table 5a
Configurations of On-Job (Un)Happiness and Additional On-Job Antecedents Associating with Managers' Judgments of Employees' Very Low In-Role Performances (~IRP) (Arrows 5 and 5b in Figure 4)

Model		raw coverage	unique coverage	consistency
1	~qip_c*~yservice_c*~hap_c*~pwe13_c*~dteam_c*~pconflict_c*lone_c*~supsup_c*~fulltime	0.058733	0.018354	0.982265
2	~qip_c*~yservice_c*hap_c*~pwe13_c*dteam_c*pconflict_c*~lone_c*~supsup_c*~fulltime	0.042989	0.008402	0.975926
3	qip_c*~yservice_c*~hap_c*~pwe13_c*~dteam_c*pconflict_c*lone_c*~supsup_c*~fulltime	0.052451	0.009952	0.934592
4	qip_c*~yservice_c*~hap_c*pwe13_c*dteam_c*~pconflict_c*~lone_c*~supsup_c*fulltime	0.137940	0.118280	0.919022
	solution coverage: 0.197487			
	solution consistency: 0.921233			

Table 5b
Configurational Models for Demographics and (Un)Happiness for Very Low In-Role Performance

Model		raw coverage	unique coverage	consistency
1	~hap_c*~yservice_c*~age_c*~edu_c*~married*~children*~fulltime	0.066400	0.026185	0.913580
2	~yservice_c*~age_c*~edu_c*~married*gender*~children*~fulltime	0.057509	0.017293	0.901535
3	~hap_c*~yservice_c*~age_c*~edu_c*~married*~gender*children*fulltime	0.027327	0.006281	0.912807
4	~hap_c*yservice_c*age_c*~edu_c*~married*~gender*~children*fulltime	0.050575	0.030916	0.922619
5	~hap_c*~yservice_c*age_c*~edu_c*~married*gender*~children*fulltime	0.053430	0.033771	0.926450
6	hap_c*~yservice_c*age_c*~edu_c*~married*~gender*children*fulltime	0.025369	0.003671	0.906705
	solution coverage: 0.161025			
	solution consistency: 0.876944			

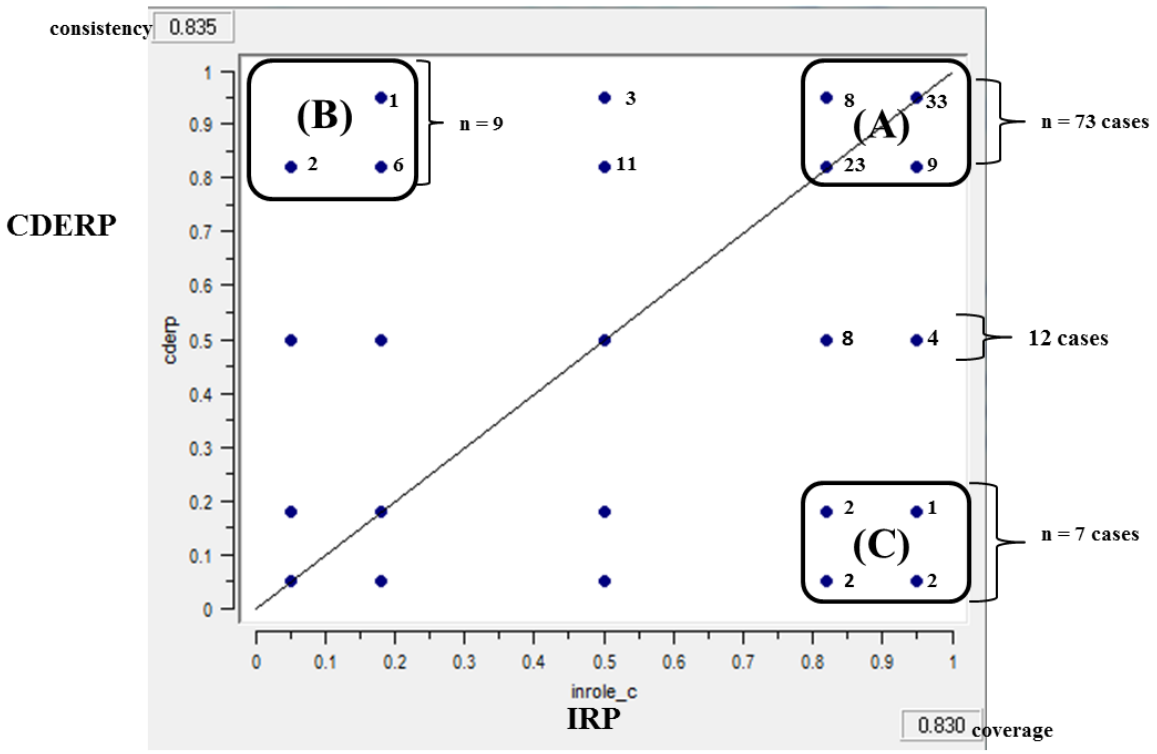

Figure 4
Impact of Managers' Evaluations of Hospitality Service Workers' In-Role Performance (IRP) on Managers' Evaluations of Customer-Directed Extra-Role Performance (CDERP) (n = 243 cases)

Notes. Numbers indicate the number of cases for each dot. (**A**) While high IRP is informative in explaining high CDERP; (**B**) nine cases exhibit high CDERP and low IRP. Thus, high IRP is not necessary for high CDERP. Also, the few cases that are (**C**) high IRP and low in CDEREP indicates that IRP is not completely sufficient for explaining high CDERP—seven cases occur with high IRP and very low CDERP.

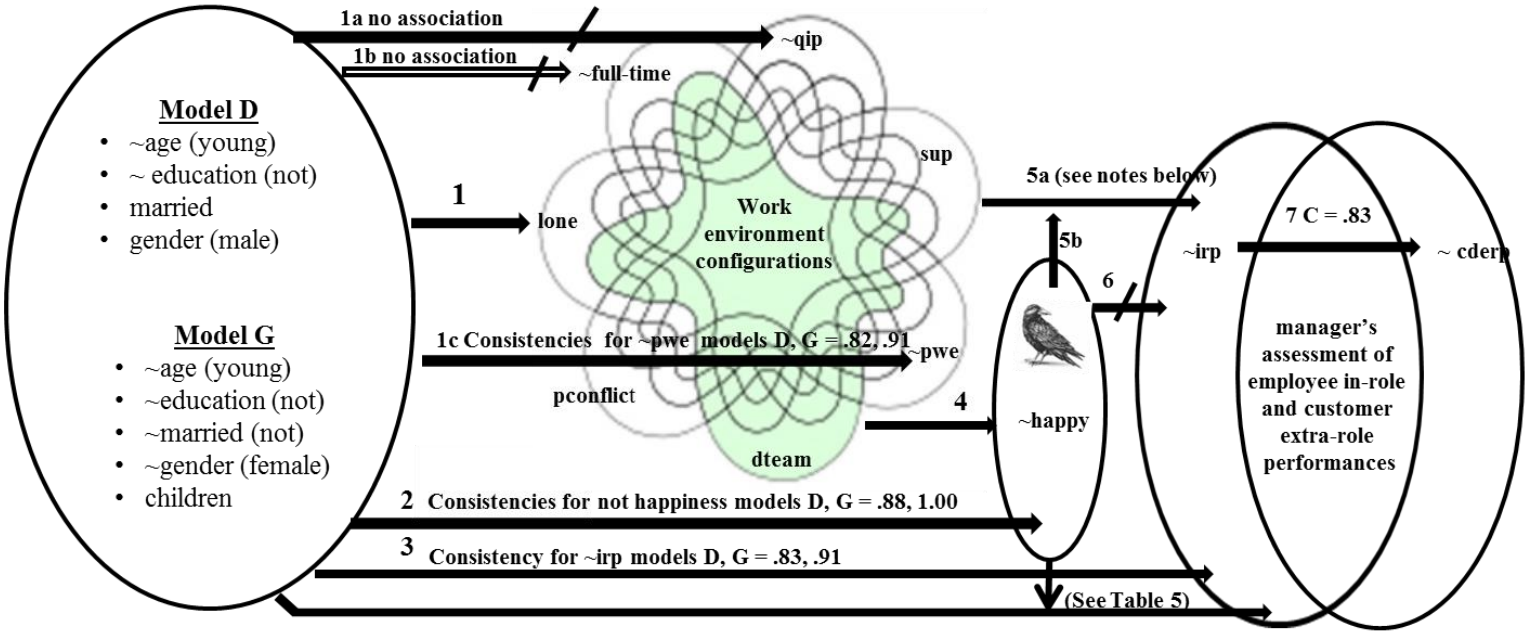

Figure 5
Configural Modeling Associations with Hospitality-Service Employee Work Contexts, Very Low Happiness, Very Low In-Role, and Very Low Customer-Directed Extra Role Performances

Key: dteam = job demands of teamwork; cderp = customer-directed extra role performance; irp = in-role performance; lone = do not join social activities with my colleagues; pconflict = peer conflict; pwe = physical work environment pleasing; qip = quality of interpersonal relationships; sup = supervisor support; yservice (not shown in figure)

Notes on findings. (1) For arrow 4: five work environment configurations have high consistencies in associating with not happiness. For example, ~happy ≤ ~yservice●~qip●~pwe~dteam●pconflict●lone●~sup, consistency = .93. See Table 6b for detailed findings. For arrows 5a and 5b, 6 of 7 models predicting high membership in low irp (i.e., ~irp) very well include ~yservice. Example model:
~irp = ~fulltime●~happy●~pwe●~dteam●~pconflict●lone●~supsup_c●~yservice●~qip_c (consistency = 0.982)

Table 6a
On-Job Antecedent Configurations Associating with Very High Happiness-at-Work
(Arrow 4 in Figure 3)

Model		raw coverage	unique coverage	consistency
1	~pconflict_c*pwe13_c*dteam_c*supsup_c*~lone_c*fulltime	0.221722	0.077981	0.920395
2	qip_c*pwe13_c*~dteam_c*supsup_c*lone_c*fulltime	0.262792	0.069750	0.921452
3	pconflict_c*qip_c*pwe13_c*supsup_c*lone_c*fulltime	0.207722	0.023420	0.924471
4	pconflict_c*qip_c*~pwe13_c*dteam_c*supsup_c*~lone_c*~fulltime	0.050318	0.016377	0.919380
5	~pconflict_c*qip_c*pwe13_c*dteam_c*supsup_c*lone_c*~fulltime	0.069410	0.035469	1.000000
	solution coverage: 0.438184			
	solution consistency: 0.907238			

Note. High supervisory support is an ingredient in all models which indicates its necessity for very high happiness-at-work.

Table 6b
On-Job Antecedent Configurations Associating with Very Low Happiness-at-Work
(Findings for Arrow 4 in Figure 4)

Model		raw coverage	unique coverage	consistency
1	~qip_c*~pwe13_c*~dteam_c*~supsup_c*fulltime	0.335357	0.060408	0.927514
2	qip_c*~pwe13_c*~lone_c*~supsup_c*fulltime	0.338953	0.056333	0.910300
3	~qip_c*~pwe13_c*~dteam_c*~pconflict_c*lone_c*~supsup_c	0.230843	0.017978	0.937378
4	qip_c*~pwe13_c*dteam_c*pconflict_c*~supsup_c*fulltime	0.240271	0.012305	0.898148
5	qip_c*~pwe13_c*~dteam_c*pconflict_c*lone_c*~supsup_c*~fulltime	0.055134	0.014383	0.981508
6	~qip_c*pwe13_c*~dteam_c*~pconflict_c*~lone_c*supsup_c*fulltime	0.162685	0.028366	0.900088
	solution coverage: 0.538953			
	solution consistency: 0.859126			

Note. Five of the six models include the negation of supervisory support—for many cases having very low supervisory support associates with very low performance but not always.